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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,978	10/28/2003	Kia Silverbrook	ZG006US	6497
24011	7590	09/01/2005	EXAMINER	
SILVERBROOK RESEARCH PTY LTD 393 DARLING STREET BALMAIN, 2041 AUSTRALIA			TRAN, BINH X	
			ART UNIT	PAPER NUMBER
			1765	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,978

Applicant(s)

SILVERBROOK, KIA

Examiner

Binh X. Tran

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7-28-2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed 7-28-2005 is objected to under 37 CFR 1.78. The added material is improper and ineffective as follow:

In the original application filed on 10-28-2003, applicants only claim that this application (10/693,978) is a continuation of 10/302,606 filed 11-23-2002, now US 6,644,767. However, in the amendment to the specification filed on 7-28-2005, applicants try to claim the additional priority of application No. 09/855,094 filed May 14, 2001, now US 6,485,123, which is a continuation-in-part of application No. 09/112,815 filed on July 10, 1998, now US 6,247,792. This claiming benefit of earlier filing date and cross-references to other applications is improper and ineffective under 37 CFR 1.78 (a) (2) (ii). According to the 37 CFR 1.78 (a) (2) (ii) "This reference [i.e. cross reference to other application] must be submitted during the pendency of the later-filed application. If the later-filed application is an application filed under 35 U.S.C. 111(a), this reference must also be submitted within the later of four months from the actual filing date of the later-filed application or sixteen months from the filing date of the prior-filed application". Since the claiming benefit of earlier filing date and cross-reference to other application is improper and ineffective, the examiner will consider the priority date of this application (10/693,978) is 11-23-2002 base on the application No. 10/302,606 in which the applicants original claiming the benefit of priority date.

Priority

2. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Australia on 7-15-1997. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter (See discussed above for further detail).

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 6 of claim 1, "an actuator that is fast" (emphasis added) is subjective and indefinite. It is unclear from the claim, what specific condition that applicants consider as "fast".

In line 23 of claim 1, "etching the actuator material to define...closure members" (emphasis added) is indefinite. Applicants disclose two different actuator materials: the first layer of actuator material, and the second layer of actuator material. It is unclear

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from the claim, whether the phrase "the actuator material" refers to the first actuator material, the second actuator material or the combination of the first and the second layer.

In claim 2, the phrase "the actuator material" (occurs 4 times) is indefinite for the same reason as discussed above.

In line 1 of claim 3, the phrase "the actuator material" is indefinite for the same reason as discussed above.

In claim 7, the phrase "the actuator material" (occurs two times) is indefinite for the same reason as discussed above.

Claims 2-8 are also indefinite because they directly or indirectly depend on indefinite claim 1.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Silverbrook (US 6,247,792).

Respect to claim 1, Silverbrook disclose a method for making a ink jet print head chip, the printhead chip having a substrate that incorporates drive circuitry layers (CMOS circuitry, col. 5 lines 50-55), the method comprising the steps of:

depositing a layer of a sacrificial material (50) on the substrate that incorporates drive circuitry layers positioned on a wafer substrate (12) (col. 7 lines 31-45, Fig 5-6);

etching the layer of sacrificial material (50) to define deposition zones (51) for the actuators (col. 7 lines 48-50, Fig 7);

depositing a first layer of thermally expandable actuator material (52) on the deposition zones (51) (col. 7 lines 50-51);

etching the first layer of actuator material (52) and the drive circuitry layers to define deposition zones for a conductive material of the actuators and for vias for heating circuits of the actuators (col. 7 lines 52-55, Fig 8);

depositing a layer of a conductive material (53) on the first layer of the actuator material (52) (col. 7 lines 55-58);

etching the layer of conductive layer material (53) to define a heating circuit for each actuator (col. 7 lines 59-60, Fig 9);

depositing a second layer of actuator material (54) on the layer of conductive material (53) so that the heating circuit is embedded in the actuator material (col. 7 lines 61, fig 10);

etching the actuator material to define the actuators and the closure member (col. 7 lines 62-64);

forming the nozzle chamber walls (28) with a suitable deposition and subsequent etching technique (col. 8 lines 1-5, fig 11);

etching away the sacrificial layer to free each actuator and closure member (col. 8 lines 20-23);

etching the ink channel through the substrate so that each ink channel in fluid communication with a respective nozzle chamber (col. 8 lines 15-20, Fig 14).

Respect to claim 2, Silverbrook teaches the actuator (35) is shaped so that in a rest condition, the actuator enclosed an arc; when the actuator material is heated, different thermal expansion of the actuator material causes the actuator (35) to straighten at least partially and subsequent cooling of the actuator causes the actuator return to its rest condition, thereby displacing the closure member between the closed and opened position (Fig 2, col. 6 lines 1-60).

Respect to claim 3, Silverbrook disclose that the actuator material is etched so that each closure member is positioned to close a respective ink inlet channel in its closed condition and to open to the ink inlet channel in its open position (fig 15-16). Respect to claim 4, Silverbrook discloses each heating circuit includes a heater (23) positioned proximate an inside edge of the conductive material and return to trace positioned outwardly of the heater, so that an inside region of the actuator material is heated to a greater extend than the remainder of the actuator material (col. 6 lines 25-41). Respect to claim 5, Silverbrook teaches a serpentine length of conductive material (copper) material defines each heater (col. 6 lines 25-28). Respect to claim 6, Silverbrook discloses depositing the first and second layer of actuator material include depositing first and second layer of polytetrafluoroethylene; and depositing the conductive material includes depositing copper (PTFE, col. 7 lines 50-52, 59-60, col. 6 lines 24-29). Respect to claim 7, Silverbrook discloses the actuator defines a coil that partially uncoils when the actuator materials (PTFE) undergoes differential thermal

expansion (col. 6 lines 25-44). Respect to claim 8, Silverbrook discloses the chamber walls (28) are fabricated so that the actuators and the closure are each positioned within respective nozzle chambers (Fig 15-16).

Response to Arguments

8. Applicant's arguments filed 7-28-2005 have been fully considered but they are not persuasive.

With respect to 35 USC 112, the applicants argue that the word "fast" (i.e. an actuator that is fast) is used in context of "secured" or "fixed". According to applicant, "the later definition of the 'closure chamber at the 'opposite end' make this clear". The examiner disagrees. First, the applicants did not compare the word "fast" with respect to the word "secured" or "fixed" in claim 1. Second, the term "closure member" at the "opposite end" does not mean "secured" or "fixed".

The applicants further argue that the term "the actuator material" is considered to be clear because "the actuator material" refers collectively to all of the actuator material not necessarily to either of the layers. The examiner disagrees. The applicants disclose two different actuator materials (first actuator layer and second actuator layer). Therefore it is unclear whether the phrase "the actuator material" refers to the first actuator material, the second actuator material or the combination of the first and the second layer.

Respect to the 35 USC 102(b) rejection, the applicants argue that "the present application is entitled to the benefits of priority stemming from the priority of documents, AU PO7991 and AU PO8001, which are the same priority documents as the Silverbrook

citation referenced by the examiner". According to applicants because of the priority, the Silverbrook reference used by the examiner is "unable to be cited under 35 USC 102(b) in the present circumstances". The examiner disagrees. As discussed above, the priority based on Application No. 09/855,094 and 09/112,815 is improper and ineffective under 37 CFR 1.78 (a) (2) (ii). The valid priority date for this application is 11-23-2002. Base on this priority date, the examiner still maintains the previous 102(b) rejection based on the Silverbrook reference is proper.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X. Tran whose telephone number is (571) 272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Binh X. Tran

NADINE G. NORTON
SUPERVISORY PATENT EXAMINER

